

Overview

Industry
Public Sector

Location
United Kingdom

Products
**Occupancy Sensors, BMS Integrations
& Analytics.**

Solution
Energy Management & Reduction

Summary

The use of granular occupancy data for zones through to individual work stations enabled a true understanding of use and this data was used to automatically control the heating and lighting within the area. This resulted in a 25% reduction in monthly energy consumption and resulted in significant cost savings (with a significant return on investment).

[Get in touch](#)



Freespace works with a major public sector client who provide their customers with a multi-functional hybrid space. Situated in Central London, the office boasts a combination of consistency multifunctional spaces to provide the perfect setting for an event.

The client has been a Freespace customer for 5+ years benefitting from deep insights delivered using occupancy data for its estates. In early 2024, they approached Freespace to integrate the occupancy and air quality data with the BMS system in operation. Working along with the building automation partner, Freespace successfully delivered a solution that resulted in over a **25%** decrease in monthly energy consumption, over and above the already optimized operation done without the use of occupancy data. This resulted in an overall **50%** reduction in energy consumption.

The partners delivered a five step process to set up an operational system to coordinate the individual components which included:

- **Step 1:** Implement Freespace sensors and establish the building gateway to learn the site
- **Step 2:** Map Mechanical, Electrical & Plumbing (MEP) equipment to zones – geo-positional alignment
- **Step 3:** Map occupancy sensors to zones – geo-positional alignment
- **Step 4:** Build relational map – desk, room, floor, building
- **Step 5:** Activate command and control strategies for HVAC equipment

Overview

Industry

Public Sector

Location

United Kingdom

Products

**Occupancy Sensors, BMS Integrations
& Analytics.**

Solution

Energy Management & Reduction

Summary

The use of granular occupancy data for zones through to individual work stations enabled a true understanding of use and this data was used to automatically control the heating and lighting within the area. This resulted in a 25% reduction in monthly energy consumption and resulted in significant cost savings (with a significant return on investment).

[Get in touch](#)



The system generates command states for zones based on the zonal occupancy data or based on desk occupancy exceeding a preset threshold. This is fed to the spatially orientated MEP asset that serves that zone and its control logic is used to operate the asset. Control logic is written based on sensor data which delivers moderated ventilation rates, moderated heating output and moderated cooling output. Feedback from users is attained to ensure that end user experience is not compromised.

Occupancy then can be used as a primary predictor of system setbacks and turnup which is then validated by the area air quality sensors in providing the necessary outcome. The system learns the latent response inertia of the space and builds a model that optimizes the exact times for asset control based on predicted occupancy. Comparison to historical energy consumption can be used to demonstrate actual savings.



“Freespace helped to reduce energy consumption across our office by 50% by using occupancy based Ventilation and Air Conditioning energy reduction.”

General Manager